IN THE CLAIMS:

Listing of the claims:

1. (Currently amended) An ~~image apparatus~~ imaging spectrometer comprising on a[[n]] longitudinal axis of the spectrometer:

(i) an input polariser for resolving light incident thereon into a single linear polarisation state,

(ii) a first polarising beam splitter arranged to receive light passing through the input polariser, and arranged to resolve said light into equal magnitude orthogonally polarised rays, said rays being mutually spaced and having a path difference therebetween,

(iii) at least one additional polarising beam splitter arranged to receive light passing through the first polarising beam splitter,

(iv) an output polariser orientated such that its transmission axis is parallel to or perpendicular to the transmission axis of the input polariser for resolving the orthogonally polarised light rays having passed through the or each additional polarising beam splitter into the same or perpendicular polarisation state as light resolved by the first polariser,

(v) focussing means, the first polarising beam splitter, the or each additional beam splitter and the focussing means being mutually spaced such that said mutually spaced rays are brought to coincidence whereby interference fringes are produced, and,

(vi) a light sensitive detector arranged to detect said interference fringes, wherein one beam splitter is mounted for movement perpendicular to said longitudinal axis of the spectrometer, the other beam splitter(s) being rigidly mounted against movement.

2. (Original) An apparatus as claimed in claim 1, wherein at least one, polarising beam splitter is a Wollaston prism.

3. (Currently amended) An apparatus as claimed in claim 2, wherein each of the beam splitters of the imaging spectrometer is a Wollaston prism.

4. (Original) An apparatus as claimed in any preceding claim, wherein only a single additional beam splitter is provided and the focussing means is a lens.

5. (Original) An apparatus as claimed in claim 4, wherein the beam splitters are mutually positioned such that the orthogonally polarised rays having passed therethrough are linearly spaced and parallel, the lens being provided between the beam splitters and the detector to bring said rays, after being resolved by the output polariser, into coincidence at the detector.

6. (Currently amended) An apparatus as claimed in claim 5, wherein the first polarising beam splitter and ~~the~~ one additional polarising beam splitter are identical mutually parallel Wollaston prisms which are oppositely orientated with respect to their wedge angles.

7. (Original) An apparatus as claimed in claim 4, wherein the beam splitters are positioned between the lens and the detector, the mutual spacing of the beam splitters and the detector being such that the rays passing through the lens and beams splitters are brought to coincidence at the detector.

8. (Currently amended) An apparatus as claimed in ~~any one of~~ claims 1 ~~to 3~~, wherein exactly two additional beam splitters are provided, the beams splitters being arranged such that the orthogonally polarised rays having passed therethrough are parallel or co-axial.

9. (Original) An apparatus as claimed in claim 8, wherein the polarising beam splitter and two additional polarising beam splitters are two identical Wollaston prisms mounted in parallel, with a third Wollaston prism having twice the wedge angle of the other two prisms being mounted therebetween.

10. (Previously presented) An apparatus as claimed in claim 1, additionally comprising a processor, the detector being connected to the processor, said processor being capable of carrying out Fourier transformation on the interference fringes at the detector, whereby to yield the spectrum of light incident on the detector.

11. (Cancelled)

12. (Currently amended) A method of generating a temporal interferogram comprising the steps of: ~~using the apparatus of claim 1~~

moving the beam splitter mounted for movement within the imaging spectrometer of claim 1; and

generating a temporal interferogram.